WHAT IS CLAIMED IS:

1. A composition comprising:

(a) a core particle with at least one first attachment site; and

(b) at least one antigen or antigenic determinant with at least one second attachment site,

wherein said antigen or antigenic determinant is a Aβ1-6 peptide, and wherein said second attachment site being selected from the group consisting of:

(i) an attachment site not naturally occurring with said antigen or antigenic determinant; and

(ii) an attachment site naturally occurring with said antigen or antigenic determinant,

wherein said second attachment site is capable of association to said first attachment site; and wherein said Aβ1-6 peptide and said core particle interact through said association to form an ordered and repetitive antigen array.

2. The composition of claim 1, wherein said core particle is selected from the group consisting of:

i) a virus;

ii) a virus-like particle;

iii) a bacteriophage;

iv) a virus-like particle of a RNA-phage;

v) a bacterial pilus;

vi) a viral capsid particle; and

vii) a recombinant form of (i), (ii), (iii), (iv), (v) or (vi).

3. The composition of claim 1, wherein said core particle comprises, preferably is, a virus-like particle, wherein preferably said virus-like particle is a recombinant virus-like particle.

4. The composition of claim 3, wherein said virus-like particle comprises recombinant proteins, or fragments thereof, selected from the group consisting of:

(a) recombinant proteins of Hepatitis B virus;
(b) recombinant proteins of measles virus;
(c) recombinant proteins of Sindbis virus;
(d) recombinant proteins of Rotavirus;
(e) recombinant proteins of Foot-and-Mouth-Disease virus;
(f) recombinant proteins of Retrovirus;
(g) recombinant proteins of Norwalk virus;
(h) recombinant proteins of Alphavirus;
(i) recombinant proteins of human Papilloma virus;
(j) recombinant proteins of Polyoma virus;
(k) recombinant proteins of bacteriophages;
(l) recombinant proteins of RNA-phages;
(m) recombinant proteins of Ty;
(n) recombinant proteins of Qβ-phage;
(o) recombinant proteins of GA-phage;
(p) recombinant proteins of fr-phage;
(q) recombinant proteins of AP205 phage; and
(r) fragments of any of the recombinant proteins from (a) to (q).

5. The composition of claim 3, wherein said virus-like particle is Hepatitis B virus core antigen.

6. The composition of claim 3, wherein said virus-like particle comprises, or alternatively consists of, recombinant proteins, or fragments thereof, of a RNA-phage.

7. The composition of claim 6, wherein said RNA-phage is selected from the group consisting of:

(a) bacteriophage Qβ;
(b) bacteriophage R17;
(c) bacteriophage fr;
(d) bacteriophage GA;
(e) bacteriophage SP;
(f) bacteriophage MS2;
(g) bacteriophage M11;
(h) bacteriophage MX1;
(i) bacteriophage NL95;
(j) bacteriophage f2;
(k) bacteriophage PP7; and
(l) bacteriophage AP205.

8. The composition of claim 3, wherein said virus-like particle comprises, or alternatively consists of, recombinant proteins,or fragments thereof, of RNA-phage Qβ.

9. The composition of claim 3, wherein said virus-like particle comprises, or alternatively consists of, recombinant proteins, or fragments thereof, of RNA-phage fr.

10. The composition of claim 3, wherein said virus-like particle comprises, or alternatively consists of, recombinant proteins, or fragments thereof, of RNA-phage AP205.

11. The composition of claim 6, wherein the recombinant proteins comprise, or alternatively consist essentially of, or alternatively consist of coat proteins of RNA phages.

12. The composition of claim 11, wherein said coat proteins of RNA phages having an amino acid are selected from the group consisting of:

(a) SEQ ID NO:4;

(b) a mixture of SEQ ID NO:4 and SEQ ID NO:5;

(c) SEQ ID NO:6;

(d) SEQ ID NO:7;

(e) SEQ ID NO:8;

(f) SEQ ID NO:9;

(g) a mixture of SEQ ID NO:9 and SEQ ID NO:10;

(h) SEQ ID NO:11;

(i) SEQ ID NO:12;

(k) SEQ ID NO:13;

(l) SEQ ID NO:14;

(m) SEQ ID NO:15;

(n) SEQ ID NO:16; and

(o) SEQ ID NO:28.

13. The composition of claim 6, wherein the recombinant proteins comprise, or alternatively consist essentially of, or alternatively consist of mutant coat proteins of RNA phages.

14. The composition of claim 13, wherein said RNA-phage is selected from the group consisting of:

(a) bacteriophage Qβ;

(b) bacteriophage R17;

(c) bacteriophage fr;

(d) bacteriophage GA;

(e) bacteriophage SP;
(f) bacteriophage MS2;
(g) bacteriophage M11;
(h) bacteriophage MX1;
(i) bacteriophage NL95;
(k) bacteriophage f2;
(l) bacteriophage PP7; and
(m) bacteriophage AP205.

15. The composition of claim 14, wherein said mutant coat proteins of said RNA phage have been modified by removal of at least one lysine residue by way of substitution.

16. The composition of claim 14, wherein said mutant coat proteins of said RNA phage have been modified by addition of at least one lysine residue by way of substitution.

17. The composition of claim 14, wherein said mutant coat proteins of said RNA phage have been modified by deletion of at least one lysine residue.

18. The composition of claim 14, wherein said mutant coat proteins of said RNA phage have been modified by addition of at least one lysine residue by way of insertion.

19. The composition of claim 1, wherein said second attachment site is capable of association to said first attachment site through at least one covalent bond.

20. The composition of claim 1, wherein said second attachment site is capable of association to said first attachment site through at least one non-peptide bond.

21. The composition of claim 1, wherein said Aβ1-6 peptide is fused to said core particle.

22. The composition of claim 1, wherein said Aβ1-6 peptide is selected from the group consisting of:

(a) human Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:75;

(b) murine Aβ1-6 peptidehaving an amino acid sequence of SEQ ID NO:76;

(c) primate Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:84;;

(d) rabbit Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:85;

(e) xenopus laevis Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:86;

(f) rat Aβ1-6 peptide havingan amino acid sequence of SEQ ID NO:87; and

(g) guinea pig Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:88.

23. The composition of claim 1, wherein said Aβ1-6 peptide has an amino acid sequence of SEQ ID NO:75.

24. The composition of claim 1 further comprising an amino acid linker, wherein said amino acid linker comprises, or alternatively consists of, said second attachment site.

25. The composition of claim 1 or claim 24, wherein said second attachment or said amino acid linker with said second attachment site is bound to said Aβ1-6 peptide at its C-terminus.

26. The composition of claim 1 or claim 24, wherein said second attachment site or said amino acid linker with said second attachment site is selected from the group consisting of:

(a) GGC;
(b) GGC-CONH2;
(c) GC;
(d) GC-CONH2;
(e) C; and
(f) C-CONH2.

27. The composition of claim 1, wherein said Aβ1-6 peptide with said at least second attachment site is NH2-DAEFRHGGC-CONH2 (SEQ ID NO: 77).

28. The composition of claim 27, wherein said virus-like particle is a virus-like particle of RNA-phage Qβ coat protein.

29. A pharmaceutical composition comprising:
(a) the composition of claim 1; and
(b) an acceptable pharmaceutical carrier.

30. The pharmaceutical composition of claim 29 further comprising an adjuvant.

31. The pharmaceutical composition of claim 29, wherein said vaccine composition is devoid of an adjuvant.

32. A vaccine composition comprising the composition of claim 1.

33. The vaccine composition of claim 32, further comprising an adjuvant.

34. The vaccine composition of claim 32, wherein said vaccine composition is devoid of an adjuvant.

35. The vaccine composition of claim 32, wherein said virus-like particle comprises recombinant proteins, or fragments thereof, of a RNA-phage.

36. The vaccine composition of claim 32, wherein said virus-like particle comprises recombinant proteins or fragments thereof, of RNA-phage Qβ.

37. The vaccine composition of claim 32, wherein said virus-like particle comprises recombinant proteins, or fragments thereof, of RNA-phage fr.

38. The vaccine composition of claim 32, wherein said virus-like particle comprises recombinant proteins, or fragments thereof, of RNA-phage AP205.

39. The vaccine composition of claim 32, wherein said Aβ1-6 peptide is selected from the group consisting of:

(a) human Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:75;

(b) murine Aβ1-6 peptidehaving an amino acid sequence of SEQ ID NO:76;

(c) primate Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:84;;

(d) rabbit Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:85;

(e) xenopus laevis Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:86;

(f) rat Aβ1-6 peptide havingan amino acid sequence of SEQ ID NO:87; and

(g) guinea pig Aβ1-6 peptide having an amino acid sequence of SEQ ID NO:88.

40. The vaccine composition of claim 32 further comprising an amino acid linker, wherein said amino acid linker comprises, or alternatively consists of, said second attachment site.

41. The vaccine composition of claim 40, wherein said amino acid linker with said second attachment site is bound to said Aβ1-6 peptide at its C-terminus.

42. The vaccine composition of claim 41, wherein said amino acid linker with said second attachment site is selected from the group consisting of:

(a) GGC;

(b) GGC-CONH2;

(c) GC;

(d) GC-CONH2;

(e) C; and

(f) C-CONH2.

43. The vaccine composition of claim 32, wherein said antigen or antigenic determinant with said at least second attachment site is NH2-DAEFRHGGC-CONH2 (SEQ ID NO: 77).

44. The vaccine composition of claim 43, wherein said virus-like particle is a virus-like particle of RNA-phage Qβ coat protein.

45. A process for producing a composition of claim 1 comprising:

(a) providing a core particle with at least one first attachment site;

(b) providing at least one antigen or antigenic determinant with at least one second attachment site,

wherein said antigen or antigenic determinant is a Aβ1-6 peptide, and wherein said second attachment site being selected from the group consisting of:

(i) an attachment site not naturally occurring with said antigen or antigenic determinant; and

(ii) an attachment site naturally occurring with said antigen or antigenic determinant; and

wherein said second attachment site is capable of association to said first attachment site; and

(c) combining said core particle and said at least one antigen or antigenic determinant, wherein said antigen or antigenic determinant and said core particle interact through said association to form an ordered and repetitive antigen array.

46. A method of immunization comprising administering the composition of claim 1 to an animal or human.

47. The method of immunization of claim 46, wherein said antigen or antigenic determinant is a self-antigen.

48. The method of immunization of claim 46, wherein said animal is a human.

49. The method of immunization of claim 48, wherein said antigen or antigenic determinant is human Aβ1-6 peptide.

50. Composition of claim 1 for use as a medicament.

51. Use of a composition of claim 1 for the manufacture of a medicament for treatment of Alzheimer and related diseases.